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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,329	03/13/2002	Yoshihito Ohta	10873.881USWO	2865

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EXAMINER	
XIAO, KE	

ART UNIT	PAPER NUMBER
2675	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/088,329	OHTA ET AL.	
	Examiner	Art Unit	
	Ke Xiao	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-18 and 20-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-10,14-18 and 20-22* is/are rejected.

7)☒ Claim(s) *11-13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10 November 2004*
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 8-10, 14-18, and 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakajima et al. (US 6,486,864).

Regarding **Claim 1**, Nakajima et al. teaches a method for driving a liquid crystal display device having a liquid crystal panel (Fig. 1), the liquid crystal panel comprising a plurality of source lines to which pixel data are supplied (Fig. 1, item 2), a plurality of gate lines to which scanning signals are supplied (Fig. 1, item 1), pixel cells positioned in matrix form in correspondence with intersecting points of the source lines and the gate lines (Fig. 1, item 6), a source driver that drives the source lines based on an input image signal (Fig. 1, item 2 it is inherent that the source line has a source driver), a gate driver that drives the gate lines (Fig. 1, item 1 it is inherent that the gate line has a gate driver), and a back light (it is inherent that a LCD used for TV has a back light and since it is a transmissive LCD a back light is

essential for proper operation), the pixel cells being applied with a signal for initializing a state of a liquid crystal therein as well as pixel data in correspondence with the image signal in the pixel cells (Col. 3, lines 1-10, Fig. 2 item "Assist signal writing scanning period" reads on "signal for initializing and Fig. 2, item "Image signal writing scanning period" reads on "image signal") wherein a first period for writing the signal for initializing a state of the pixel cells (Col. 3 lines 16-19 "it is important to appropriately set the voltage value of the assist signal and the length of the period for the application of the voltage corresponding to the assist signal"), and a second period for writing pixel data are provided in one frame period (Fig. 2, item "image signal writing scanning period" and "1 field period" therefore every frame period has at least one writing period), a length of the first period is set variably for each frame and a voltage level to be applied to each pixel cell in the first period is set such that each pixel cell retains a voltage Vsup higher than a voltage level to be applied to each pixel cell in the second period (Col. 3 lines 24-26, Fig. 2 shows Vc assist and Vc sig where the difference between Vc assist and Vsmax to be largest which reads on the Vsup term as claimed).

Regarding **Claim 17**, Nakajima et al. teaches LCD device having a LC panel, the LC panel (Fig. 1) comprising: a plurality of source lines to which pixel data are supplied (Fig. 1 item 2), a plurality of gate lines to which scanning signals are supplied (Fig. 1 item 1), pixel cells positioned in matrix form in correspondence with intersecting points

of the source lines and the gate line (Fig. 1 item 6), a source driver that drives the source lines based on an input image signal (Fig. 1 item 2 it is inherent that the source line has a source driver), a gate driver that drives the gate lines (Fig. 1 item 1 it is inherent that the gate line has a gate driver), and a back light (it is inherent that a LCD used for TV has a back light), the pixel cells being applied with a signal for initializing a state of a liquid crystal therein as well as pixel data in correspondence with the image signal in the pixel cells (Col. 5 lines 1-10, Fig. 2) wherein a first period for writing the signal for initializing a state of the pixel cells (Col. 3 lines 16-19) and a second period for writing pixel the data are set in one frame period (Fig. 2 item "Assist signal writing scanning period") and a second period for writing pixel the data are set in one frame period (Fig. 2 item "Image signal writing scanning period" and "1 field period" therefore every frame period has at least one writing period), and a second period for writing pixel data in correspondence with the image signal in the pixel cells are set selectively in one frame period (Fig. 2 item "Image signal writing scanning period"), a length of the first period is set variably for each frame and means for setting a voltage level to be applied to each pixel cell in the first period such tat each pixel cell retains a voltage Vsup higher than a voltage level to be applied to each pixel cell in the second period (Col. 3 lines 24-26, Fig. 2 shows Vc assist and Vc sig where the difference between Vc assist and Vsmax to be largest which reads on the Vsup term as claimed).

Regarding **Claim 2**, Nakajima et al. further teaches that a ratio occupied by the first period in one frame period is set to be less than 20% (Fig. 2 since there are two fields in a frame 1/6 < 16.6% < 20%).

Regarding **Claim 3**, Nakajima et al. further teaches that when a voltage of a predetermined level or lower is applied to the pixel cell, it is judged that the first period needs to be set in a next frame, and the first period is set in the next frame (Fig. 2).

Regarding **Claim 4**, Nakajima et al. further teaches that when a voltage of a predetermined level or lower is applied to the same pixel cell continuously in a predetermined number of preceding frames including a current frame, it is judged that the first period needs to be set in a next frame, and the first period is set in the next frame (Fig. 2).

Regarding **Claim 5**, Nakajima et al. further teaches that the voltage Vsup is set variably for each frame (Fig. 2 item VS).

Regarding **Claim 6**, Nakajima el al. further teaches that when it is judged that the first period needs to be set to be of a level not less than a voltage Vsup applied in an immediately preceding frame, while when it is judged that the first period does not need to be set, a voltage Vsup to be applied in a next frame is set to be of a level not more than a voltage Vsup applied in an immediately preceding frame (Inherent feature because the RMS voltage on the LCD must equal zero over time to avoid damage to the LC).

Regarding **Claim 8**, Nakajima et al. further teaches that when it is judged that the first period needs to be set, a first period to be set in a next frame is set to not less than

a length of a first period set in an immediately preceding frame, while when it is judged that the first period does not need to be set, a first period to be set in a next frame is set to be not more than a length of a first period set in an immediately preceding frame (Inherent feature because the RMS voltage on the LCD must equal zero over time to avoid damage to the LC).

Regarding **Claim 9**, Nakajima et al. further teaches that the back light is controlled by using back light luminance control means that controls brightness of the back light such that the back light lights up brighter in the frame in which the first period is set than in a frame in which the first period is not set (Inherent feature because when the first period is set thereby taking up time that the backlight is not on the second period must make up for this and set the backlight brighter).

Regarding **Claim 10**, Nakajima et al. further teaches that the back light is controlled by using back light luminance control means that controls brightness of the back light such that the back light lights up bright in correspondence with a length of the first period (Inherent feature because when the first period is set thereby taking up time that the backlight is not on the second period must make up for this and set the backlight brighter).

Regarding **Claim 14**, Nakajima et al. further teaches that when the image signal as a digital signal is converted to an analog signal inside the source driver, a reference voltage used for conversion is switched in synchronization with a driving timing of the source line and the gate line (Inherently because DACs work this way).

Regarding **Claim 15**, Nakajima et al. further teaches that the pixel data is supplied to the source lines in not more than half a time that can be spent for scanning one scanning line in one frame (Figs. 2 and 4).

Regarding **Claim 16**, Nakajima et al. further teaches that a voltage corresponding to pixel data for one screen is applied to each pixel cell in not more than half a time of one frame period (Figs. 2 and 4).

Regarding **Claim 18**, Nakajima et al. further teaches that the setting means set the voltage Vsup variable for each frame (Fig 2 item VS and Fig. 4).

Regarding **Claims 20-22**, Nakajima et al. further teaches further teaches that he back light luminance control means controls the back light such that the back light lights up bright in correspondence with a length of the first period (Inherent feature because when the first period is set thereby taking up time that the backlight is not on the second period must make up for this and set the backlight brighter).

Allowable Subject Matter

Claims 11-13 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter:

Regarding **Claim 11**, prior art fails to teach that the length of the first period is controlled by a result of calculating an average luminance level by an image signal input in a predetermined number of preceding frames as claimed.

Regarding **Claim 13**, prior art fails to teach that the first period is to be set longer or shorter than a predetermined length base on whether the image signal is a moving or a static image as claimed.

Response to Arguments

Applicant's arguments filed on March 16th, 2005 have been fully considered but they are not persuasive.

It is clear from the rejection above that Nakajima et al. further teaches the limitation that length of the first period is set variably for each frame. The applicant argues that Nakajima fails to teach that the initialization period or first period as taught by Nakajima is variable for each frame. The examiner respectfully disagrees. The initialization period is not unique to any given frame. Instead the initialization period is used to set up the write period or second period, which comes directly afterwards in every frame. This initialization period is a feature of every frame and since it is defined as variable it is variable for each frame as claimed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ke Xiao whose telephone number is (571) 272-7776. The examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 28th, 2005 - kx -

SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER